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SCS ENGINEERS

Work Plan for Additional Site Characterization

Ghilotti Construction Company
246 Ghilotti Avenue
Santa Rosa, California
(SCDHS ID #00002017; NCRWQCB Site #1TSO501)
(Assessor's Parcel No. 134-171-053)

File Number 01203312.00

Prepared by:

SCS Engineers
3645 Westwind Boulevard
Santa Rosa, California 95403

To:

Mr. Cliff Ives
Sonoma County Department of Health Services
475 Aviation Blvd., Suite 220
Santa Rosa, California 95403

September 9, 2005

LIMITATIONS/DISCLAIMER

This work plan has been prepared specifically for Ghilotti Construction Company to address the need for additional Site characterization at 246 Ghilotti Avenue, Santa Rosa, California. This Work Plan has been prepared in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, expressed or implied, is made as to the professional opinions presented herein. Third parties use this report at their own risk.

Access to the property and the surrounding area is limited by buildings, roadways, underground and above-ground utilities, and other miscellaneous site features. Therefore, the proposed field exploration and points of subsurface observation are somewhat restricted.

Changes in site use and conditions may occur due to manmade changes or variations in rainfall, temperature, water usage, or other factors. Additional information which was not available to the consultant at the time this report was prepared or changes which may occur on the site or in the surrounding area may result in modification to the site that would impact this work plan and the scope of work proposed. This work plan is not a legal opinion.

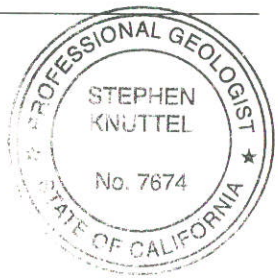
We trust this report provides the information you require at this time and we appreciate the opportunity to work with you on this project. If you require any additional information, or have any questions, please do not hesitate to contact SCS at (707) 546-9461.

KLC

Kevin L. Coker REA 7887
CA registration fees paid through 06/30/06

9905

Date



Stephen Knuttel PG 7674
CA registration fees paid through 07/31/07

9 SEPT, 2005

Date

Introduction

SCS Engineers (SCS) is pleased to present this Work Plan for additional Site characterization for Ghilotti Construction Company, 246 Ghilotti Avenue, Santa Rosa, California. This Work Plan has been prepared pursuant to a regulatory directive from the Sonoma County Department of Health Services (SCDHS, 2005). The site is located as shown on the Site Location Map, Figure 1. General site features are shown on the Site Plan, Figure 2.

Background

On March 19, 1992, Trans Tech Consultants (TTC) supervised Petroleum Engineering's removal of three underground storage tanks (USTs) from the site, consisting of one 2,000-gallon gasoline UST, one 8,000-gallon diesel fuel UST, and one 7,500-gallon diesel fuel UST (Ghilotti, 1995). Hydrocarbon odor emanated from the excavation, some sand on the bedding was stained, and a film of hydrocarbon product was observed on water in the excavation. Six sidewall soil samples, a soil sample from under each UST, a sample of soil from an excavation stockpile, and one water sample were obtained from the excavation. The approximate excavation limits are shown on Figure 2. Analytical results from the excavation pit sampling indicated an impact by petroleum-related hydrocarbons (Ghilotti, 1995).

On October 1, 1992, Ghilotti Construction Company (Ghilotti) extended and widened the north end of the tank excavation and removed soil below a concrete slab located between the UST excavation and the former fuel island. The excavation was extended to about fourteen feet below existing ground surface (bgs), was widened laterally two feet to the west, four feet to the north, and approximately fifteen feet to the east (Figure 2). The soil beneath the concrete slab was removed to depths of between approximately four feet and seven feet bgs (Ghilotti, 1995). TTC observed the removal of the additional impacted soils, the collection of soil samples for classification, and the field screening of soil using an organic vapor analyzer. On October 6, 1992, Ghilotti laterally extended the southeast portion of the excavation to remove additional impacted soil. TTC returned to the site on October 7, 1992 to collect excavation bottom samples. On October 13, 1992, Ghilotti deepened the eastern side of the excavation to depths between 11 and 14 feet bgs, in order to remove impacted soil detected in previously collected soil samples. Additional soil samples were collected from the bottom of the excavation. Laboratory analysis of soil samples collected from the final excavation limits indicated that concentrations of total petroleum hydrocarbons (TPH) as gasoline (g), as diesel (d), and benzene, toluene, ethyl benzene, and xylenes (BTEX) were non-detect (ND). The soil analytical results from the excavation activities are presented in Tables 1 and 2.

Three borings (B-1, B-2, and B-3) were drilled, sampled, and subsequently converted into monitoring wells MW-1, MW-2, and MW-3, respectively in November 1992 (Ghilotti, 1995). Soil analytical results are presented in Table 3.

Seven additional monitoring wells (MW-04 through MW-10) were drilled, sampled and installed at the approximate locations shown on Figure 2 on February 1, 2, and 3, 2005. Additionally, a CPT rig was mobilized to the site to conduct a lithology study at the approximate location indicated on Figure 2 on March 2, 2005. Water-bearing zones were identified at approximate depths of 38 and 82 feet bgs. Grab groundwater samples were collected at these depths and were submitted for analysis. Soil analytical results from the February 2005 drilling program are summarized in Table 4, and the CPT groundwater analytical results are summarized in Table 5.

The results of the February 2005 drilling program, in addition to the subsequent June 2005 sampling event, indicated that the lateral extent of the shallow groundwater plume has not been adequately assessed to the west and southwest of MW-10 and north of MW-7 (SCS, 2005b, 2005c). The seven new monitoring wells were added to the existing quarterly monitoring program at the Site. Monitoring well groundwater analytical results are summarized in Table 6.

Sensitive Receptor Survey

A Sensitive Receptor Survey (SRS) was conducted for the site in September 1996 (PNEG, 1996). The subject site has a water supply well located approximately 400 feet east of the former UST locations (Figure 3). The on-site water supply well has been on a quarterly sampling program since 1998 and has been non-detect (ND) for all target analytes since April 2002 (Table 7). The Syar Asphalt site to the south of the Ghlotti property also has a water supply well located near the railroad tracks (Figure 3). Numerous residences to the north/northwest were noted to have water supply wells. Recent information obtained from an on-going investigation of the Royal Petroleum facility northwest of the site (365 Todd Road) reveals that many of the water supply wells in the vicinity have been connected to the City of Santa Rosa Water Utility system because of a fuel release from the Royal Petroleum facility located at 365 Todd Road. No sensitive receptors, other than the on-site water supply well, were noted within 500 feet of the former UST locations.

Site Geology/Hydrogeology

The results of the January 2005 drilling program indicated a lithology generally consisting of sandy clay to sandy silt with gravel underlain by silty to sandy clays with gravel to the maximum depth explored of 21.5 feet bgs by hollow stem augers. Results from the one Cone Penetrometer Test (CPT) sounding on the site revealed silts and clays with minor sand layers to a depth of approximately 85 feet bgs. Free groundwater was encountered at depths ranging from approximately 9.5 to 11.5 feet bgs. Depth to groundwater has fluctuated seasonally during this investigation from approximately 3.5 feet bgs to 15.5 feet bgs. The groundwater flow direction on the site varies throughout the year, but has been generally to the southwest at gradients ranging from 0.002 to 0.008 (Table 8).

Proposed Monitoring Well Installation

Based on the result of the February 2005 drilling program performed at the Site, the SCDHS issued a letter directing the submittal of a Work Plan for additional site characterization (SCDHS, 2005). In response to the SCDHS' regulatory directive, SCS has prepared this Work Plan on behalf of Ghilotti.

SCS proposes four borings for conversion into monitoring wells at the approximate locations illustrated on Figure 2. The borings for the monitoring wells will be drilled to provide additional characterization of the lateral extent of shallow groundwater impact at the Site and Site vicinity. The wellbores will be drilled using 8-inch diameter hollow stem augers and will be converted into monitoring wells using 2-inch diameter Schedule 40 flush threaded PVC material. The screened interval in the monitoring wells will consist of 0.020-inch machine slotted screen and will extend from approximately 5 to 20 feet bgs, depending on field conditions encountered. The anticipated maximum depth of each boring is approximately 20 feet, with 15 feet of screen in each well. A # 2/12 sand or its equivalent will be used to create a filter pack around the screen. The filter pack will be brought to approximately one foot above the top of the screen. An approximately one foot bentonite seal will be placed on top of the sand filter pack, and the wells will be completed to the surface with a cement seal. Typical well completion details are presented on Figure W.

The well casing in each monitoring well will extend to within six inches bgs and will be fitted with a waterproof locking cap. The wells will be protected by traffic rated water-tight circular vaults set in traffic rated concrete and finished approximately ½-inch above grade.

Soil samples will be collected and examined for lithology from each of the borings beginning at an approximate depth 5 feet bgs, and every 5 feet thereafter to a maximum depth of approximately 20 feet bgs, or as determined by the on site field geologist. Based on historical soil analytical results which have been virtually non-detect (ND) for all target analytes, SCS does not anticipate submitting soil samples for analysis unless warranted based on visual observations and PID readings made in the field by the on site geologist.

Downhole drilling equipment will be pressure washed between borings to prevent cross contamination. Sampling equipment will also be cleaned between sampling intervals and borings to prevent cross contamination between samples and borings. Drill cuttings will be stockpiled on, and covered with plastic, pending characterization and disposal, if warranted. A 4-point composite sample will be collected from the stockpile material to determine if the soil can be thin-spread on site. The water generated by decontamination, well development, and sampling will be stored at the Site in labeled steel 55-gallon UN/DOT-approved 17E/H drums, pending characterization and disposal. Options for the disposal of soil and groundwater will be evaluated once the analytical results have been reported. Disposal options may include additional sampling of both stockpiled soil and groundwater prior to acceptance for disposal.

Well Survey

The tops of the new monitoring well casings will be surveyed under the supervision of a California licensed surveyor or a licensed civil engineer with surveying experience to within 0.01 feet to determine elevation relative to mean sea level. Latitude and longitude of the monitoring wells will be determined to within one meter by Global Positioning System. The surveyed monitoring well elevations and monitoring well locations will be submitted electronically to the State Department of Water Resources Geotracker database.

Well Development and Sampling

The new monitoring wells will be developed at least 48 hours after construction in order to allow time for seals to set. The wells will be developed by using a surge block and a submersible field portable, groundwater purging pump. The wells will be pumped then surged for approximately 35 to 40 strokes to set the filter pack, followed by pumping of the wells of approximately 5-10 well casing volumes. Groundwater parameters for pH, temperature, conductivity, and turbidity will be monitored to help assure that the wells are adequately developed. In the event that a well goes dry during development, the well will be allowed to recover to 80 percent of initial depth to water, surged and pumped in an effort to adequately develop the well.

Wells will be allowed to stabilize for at least 24 hours prior to measuring groundwater levels after development. The wells will be opened, allowed to equilibrate, and groundwater levels measured. The wells will be allowed to remain open for 5 to 10 minutes after which the water levels will be measured again. This process will continue until stable depth to water readings are obtained in the wells (±0.02 feet). The wells will be pumped or bailed until approximately three to five wetted well casing volumes, or at least five gallons of groundwater have been removed, whichever is greater, or until the well goes dry. Temperature, pH, conductivity, turbidity, and dissolved solids/oxygen will also be measured, until generally stabilized (± 10%) in effort to assure that water representative of aquifer conditions is entering the wells prior to sampling. Measurements will be taken at regular intervals during purging. After purging is completed, the wells will be sampled in the order purged. This sequence will allow for maximum recovery, anticipated to be at least 80% of their original well volume. In high permeability areas, recovery typically approaches 100%. If a well remains dry after purging, it will be allowed to remain open for at least one hour after which an attempt will be made to sample the well. If the well is still dry, an attempt will be made to sample the well on the next day without purging. If the well still has not recovered, the well will be sampled within the following week. Pre-purge samples will be collected from any well which previously purged dry and did not recover within one hour for sampling. These wells will then be purged and allowed to recover. If these wells recover sufficiently, a groundwater sample will then be collected and submitted for analysis and the pre-purge sample will be disposed without analysis. Groundwater samples for laboratory analysis will be collected using a separate disposable bailer for each well, and transferred to the appropriate laboratory supplied containers. The water generated by development and sampling will be stored at the Site in 55-gallon UN/DOT-approved drums, pending disposal.

Laboratory Analysis

Groundwater samples collected from the newly installed wells will be analyzed for TPH-g by EPA Method 8015M, and for BTEX and the five ether-based oxygenates (MTBE, DIPE, ETBE, TAME, and TBA) by EPA Method 8260B. The existing wells (MW-01 through MW-10) will be analyzed for MTBE only by EPA Method 8020.

Closure

The work proposed herein will be performed upon receipt of SCDHS approval, and upon receipt of the necessary drilling permits and access agreement for work plan implementation. If pre-approval by the USTCF is re-instituted before the drilling event occurs, pre-approval will be requested prior to drilling. A Site Health and Safety Plan which was previously submitted will be used for this investigation (SCS, 2005a).

Attachments
File No. 01203312.00

Figure 1: Site Location Map
Figure 2: Site Plan with Proposed Monitoring Well Locations
Figure 3: Sensitive Receptors Map
Figure 4: Site Plan - Groundwater Flow Direction and Gradient for 06/13/05
Figure 5: Isoconcentration Map - MTBE in Groundwater for 06/13/05
Figure W: Well Completion Diagram
Key to Diagram and Tables
Diagram A: MTBE & Groundwater Elevation vs Time
Table 1: Historical Soil Excavation, Stockpile and Groundwater Analytical Results
Table 2: Historical Excavation Soil Sample Results
Table 3: Soil Sample Results - Borings B-1 through B-3 (MW-1 through MW-3)
Table 4: Soil Analytical Results – Monitoring Wells – 2005
Table 5: CPT Groundwater Analytical Results
Table 6: Groundwater Analytical Results – Monitoring Wells
Table 7: Domestic Well Analytical Results
Table 8: Groundwater Flow Direction and Gradient – 1996 to present
Standard Soil and Water Sampling Procedures and QA/QC Protocol

Reference List
File No. 01203312.00

Ghilotti, 1995. Personal communication between D. Ghilotti and L. Mackey-Taverner, June 26.
PNEG, 1996. Monitoring Report, Sensitive Site Receptor Survey, and Request for Site Closure, 246 Ghilotti Avenue, Santa Rosa, California, October 15.
PNEG, 1997a. Monitoring Report and Request for Site Closure, 246 Ghilotti Avenue, Santa Rosa, February 5.
PNEG, 1997b. September 1997 Semiannual Groundwater Monitoring Report and Request for Site Closure, 246 Ghilotti Avenue, Santa Rosa, October 17.
PNEG, 1998a. Semiannual Groundwater Monitoring Report for June 1998 Sampling, 246 Ghilotti Avenue, Santa Rosa, August 1998.
PNEG, 1999a. Status Report for 246 Ghilotti Avenue, Santa Rosa, December 14.
PNEG, 1999b. Results of the December 1999 Quarterly Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, February 28.
PNEG, 2000a. Results of the March 2000 Quarterly Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, May 31.
PNEG, 2000b. Results of the 2nd Quarter 2000 Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, August 7.
PNEG, 2000c. Results of the 3rd Quarter 2000 Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, December 11.
PNEG, 2001a. Results of the 4th Quarter 2000 Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, February 23.
PNEG, 2001b. Results of the 2nd Quarter 2001 Groundwater Monitoring and Sampling and Domestic Well Sampling Event at 246 Ghilotti Avenue, Santa Rosa, June 6.
PNEG, 2001c. Results of the 3rd Quarter 2001 Groundwater Monitoring and Sampling and Domestic Well Sampling Event at 246 Ghilotti Avenue, Santa Rosa, September 7.
PNEG, 2001d. Results of the 4th Quarter 2001 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, November 30.
PNEG, 2002a. Results of the 1st Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, March 20.
PNEG, 2002b. Work Plan to Define the Lateral and Vertical Extent of MTBE Contamination- 246 Ghilotti Avenue, Santa Rosa, California, May 28.
PNEG, 2002c. Results of the 2nd Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, June 6.
PNEG, 2002d. Results of the 3rd Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, August 14.
PNEG, 2002e. Results of the 4th Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, November 13.
PNEG, 2003a. Results of the 1st Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, March 17.
PNEG, 2003b. Results of the 2nd Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, May 8.
SCDHS, 2002. Work Plan approval from C. Ives, dated June 24.

SCDHS, 2005. Work Plan Directive from C. Ives to R. Ghilotti, dated July 11.
SCS, 2003a. Results of the 3rd Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, August 13.
SCS, 2003b. Results of the 4th Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, November 20.
SCS, 2004a. Results of the 1st Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, January 29.
SCS, 2004b. Results of the 2nd Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, May 7.
SCS, 2004c. Results of the 3rd Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, August 9.
SCS, 2004d. Results of the 4th Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, December 29.
SCS, 2005a. Site Health and Safety Plan, January 2005.
SCS, 2005b. Results of Additional Subsurface Investigation, at 246 Ghilotti Avenue, Santa Rosa, California, May 6.
SCS, 2005c. Results of the 2nd Quarter 2005 Groundwater Monitoring and Sampling Program – 246 Ghilotti Avenue, Santa Rosa, California, August 18.

Distribution List
File No. 01203312.00

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Source: Mappoint.com

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DATE:	CREATED BY	APP. BY:
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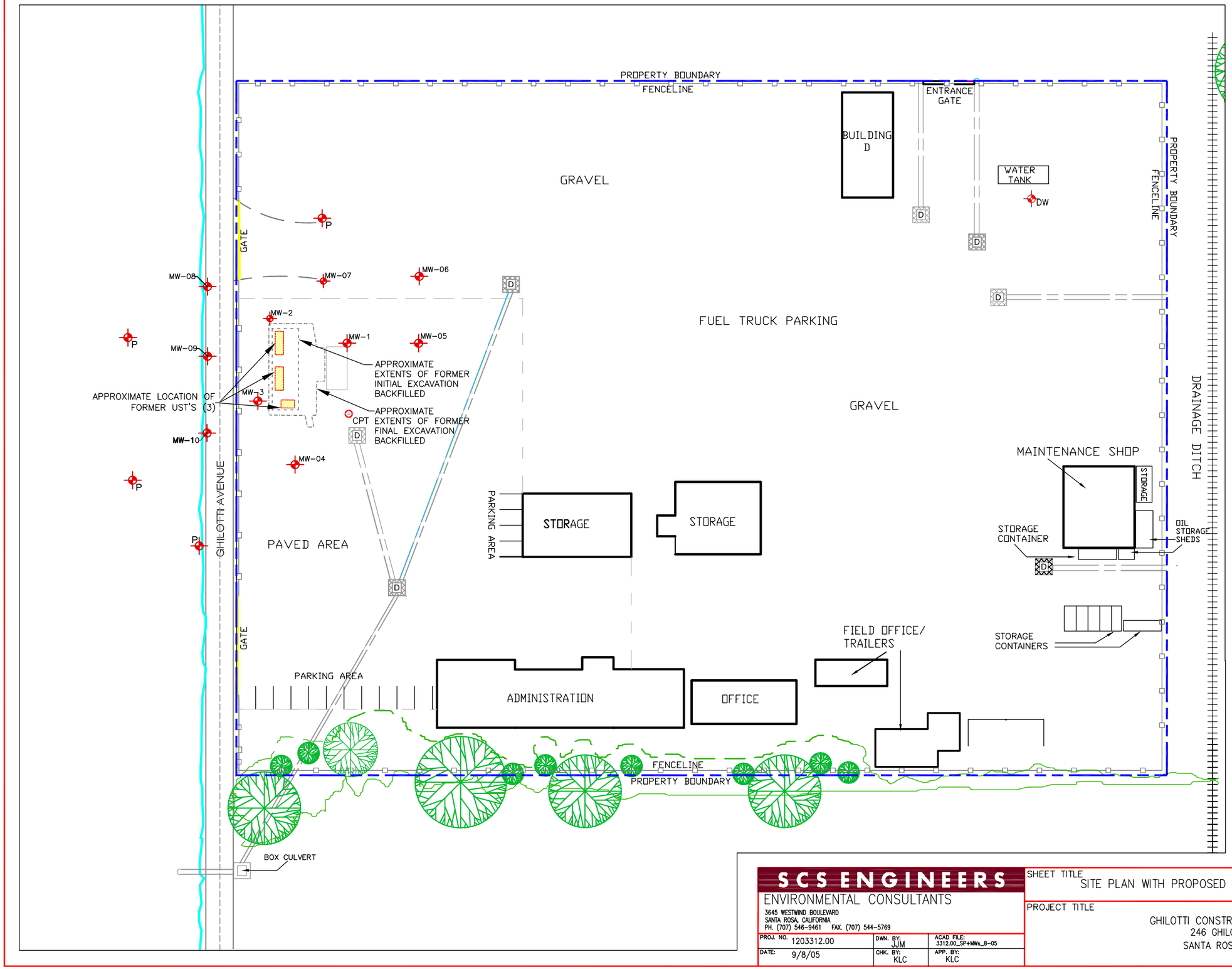
SITE LOCATION MAP

Ghilotti Construction Company
246 Ghilotti Avenue
Santa Rosa, California

APPROX.

FIGURE

1



APPROXIMATE SCALE

0 70 140

(IN FEET)

1" = 70'

LEGEND

- APPROXIMATE LOCATION OF PROPERTY BOUNDARY
- MONITORING WELL LOCATION
  P =PROPOSED
- DW DOMESTIC WELL LOCATION
- CPT CPT LOCATION
- DROP INLET LOCATION

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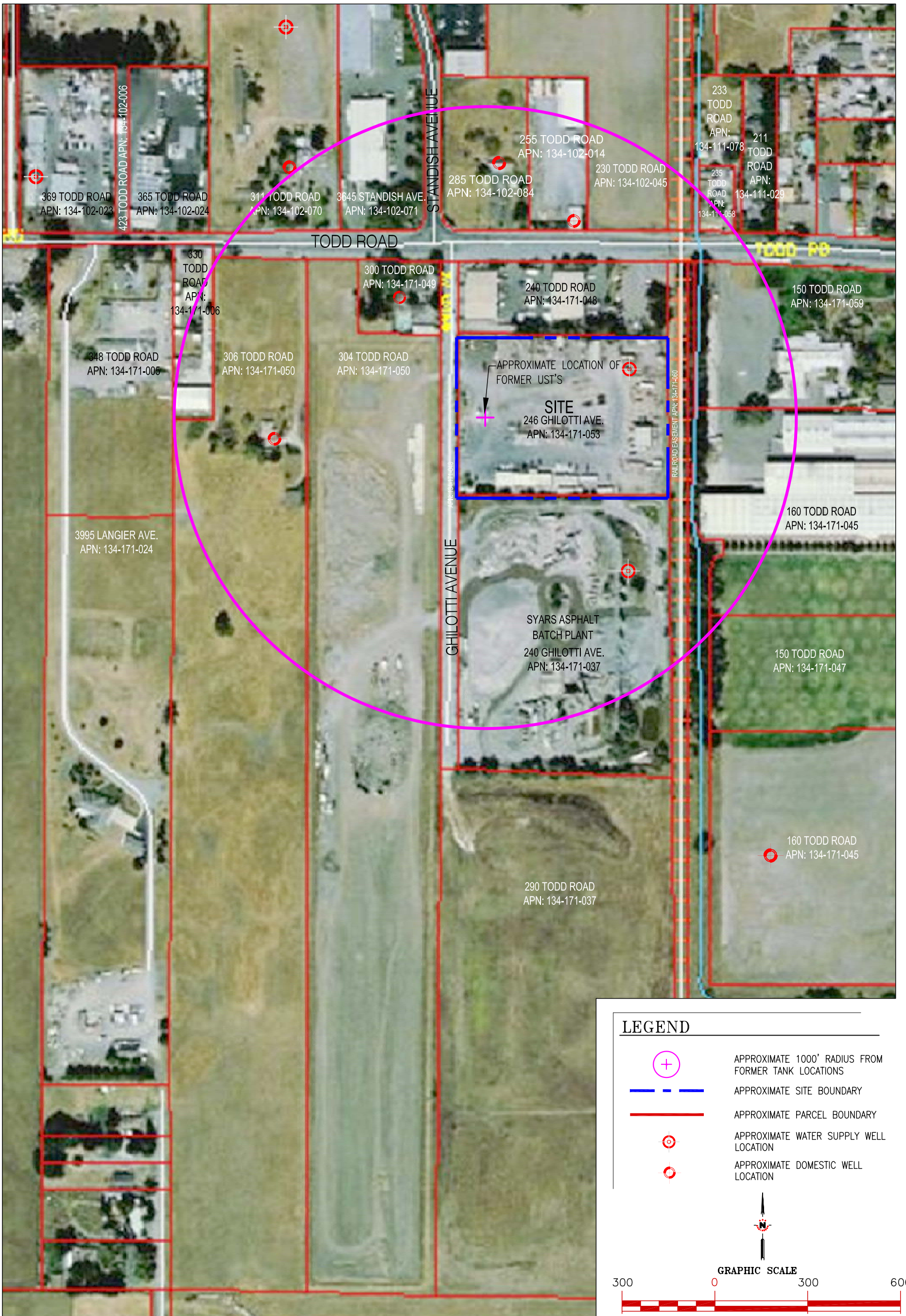
DATE: 9/8/05	CHK. BY: KLC	APP. BY: KLC

SHEET TITLE
SITE PLAN WITH PROPOSED MONITORING WELL LOCATIONS

PROJECT TITLE
GHILOTTI CONSTRUCTION COMPANY
246 GHILOTTI AVENUE
SANTA ROSA, CALIFORNIA

SCALE:
1" = 70'

FIGURE NO.
2



LEGEND

- APPROXIMATE 1000' RADIUS FROM FORMER TANK LOCATIONS
- APPROXIMATE SITE BOUNDARY
- APPROXIMATE PARCEL BOUNDARY
- APPROXIMATE WATER SUPPLY WELL LOCATION
- APPROXIMATE DOMESTIC WELL LOCATION

N

GRAPHIC SCALE

300 0 300 600

(IN FEET)

1" = 300Ft.±

SOURCE: CITY OF SANTA ROSA GIS WEBSITE; 2004 4' AERIAL.

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1203312.00		3312_SSRS_3-05
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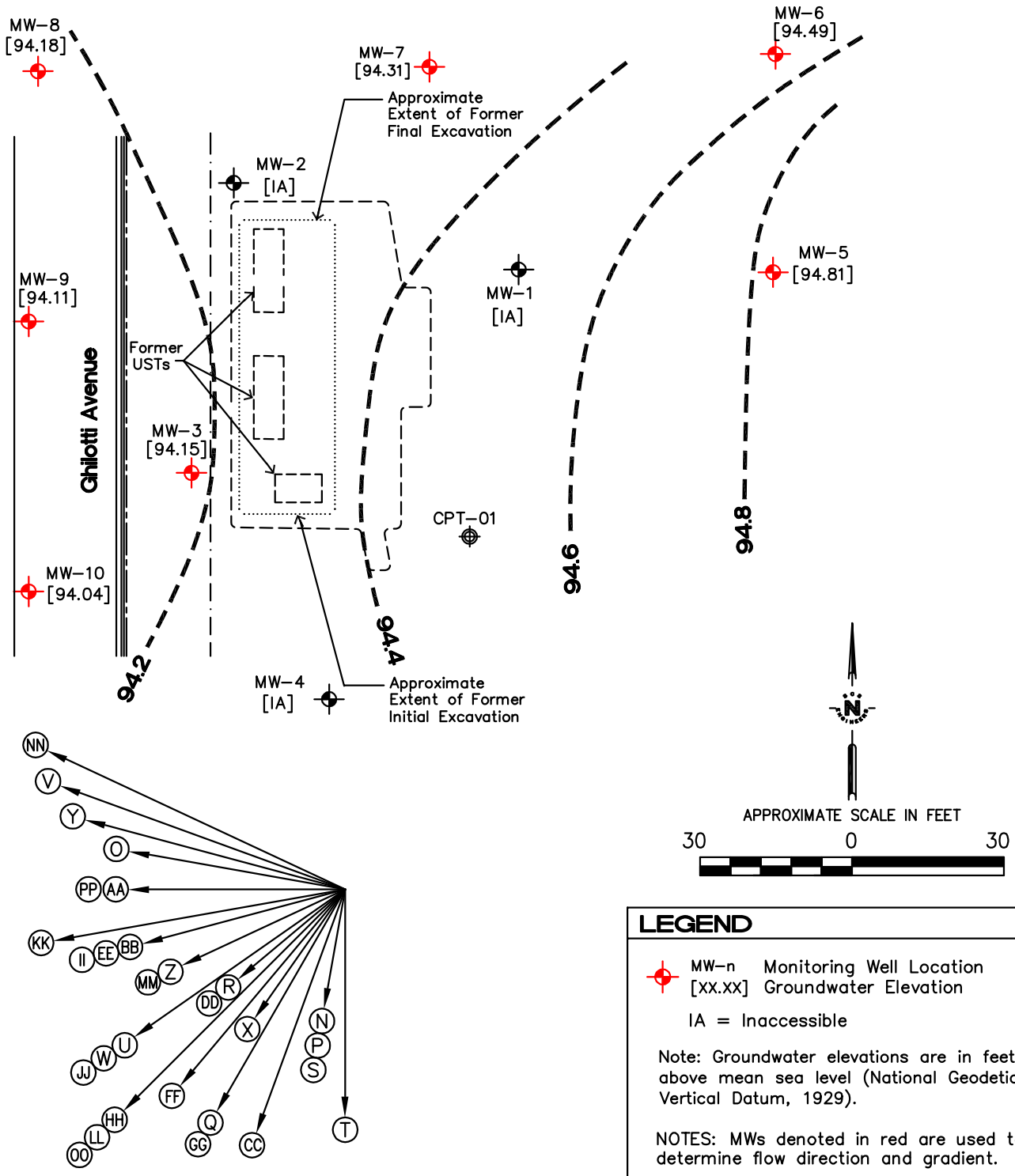
3/21/05	JJM	KLC

SHEET TITLE
SENSITIVE RECEPTORS MAP

PROJECT TITLE
GHILLOTTI CONSTRUCION COMPANY
246 GHILOTTI AVENUE
SANTA ROSA, CALIFORNIA

SCALE:
1" = 300' ±

FIGURE NO.
3



LEGEND

MW-n Monitoring Well Location
[XX.XX] Groundwater Elevation

IA = Inaccessible

Note: Groundwater elevations are in feet above mean sea level (National Geodetic Vertical Datum, 1929).

NOTES: MWs denoted in red are used to determine flow direction and gradient.

Cone Penetrometer Test Sounding (CPT) Location

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DATE: 7/11/05	CHK. BY:	APP. BY: SK

SHEET TITLE: SITE PLAN
GROUNDWATER FLOW DIRECTION AND GRADIENT FOR 06/13/05

PROJECT TITLE: GHILOTTI CONSTRUCTION COMPANY
246 GHILOTTI AVENUE
SANTA ROSA, CALIFORNIA

SCALE: 1" = 30'

FIGURE NO.: 4

SHEET 1 OF 2

GROUNDWATER FLOW LEGEND

Estimated Groundwater Flow Direction → (A)

Gradient Contour (Interval = 0.2 ft) – – – – – –

Identifier Tag	Date	Est. Flow Direction	Gradient Slope
(N)	6/24/96	S10°W	i = 0.005
(O)	12/20/96	N80°W	i = 0.003
(P)	4/18/97	S10°W	i = 0.005
(Q)	9/11/97	S30°W	i = 0.006
(R)	6/19/98	S48°W	i = 0.002
(S)	3/3/99	S10°W	i = 0.002
(T)	6/2/99	Due South	i = 0.008
(U)	12/28/99	S55°W	i = 0.003
(V)	3/23/00	N68°W	i = 0.03
(W)	6/20/00	S55°W	i = 0.003
(X)	10/3/00	S35°W	i = 0.005
(Y)	1/9/01	N75°W	i = 0.002
(Z)	4/10/01	S65°W	i = 0.003
(AA)	7/11/01	West	i = 0.003
(BB)	10/10/01	S75°W	i = 0.004
(CC)	1/9/02	S20°W	i = 0.003
(DD)	4/5/02	S50°W	i = 0.002
(EE)	7/3/02	S75°W	i = 0.004
(FF)	10/24/02	S40°W	i = 0.005
(GG)	1/22/03	S30°W	i = 0.002
(HH)	4/17/03	S45°W	i = 0.002
(II)	7/14/03	S75°W	i = 0.003
(JJ)	10/7/03	S55°W	i = 0.004
(KK)	1/2/04	S80°W	i = 0.002
(LL)	4/6/04	S45°W	i = 0.002
(MM)	7/7/04	S65°W	i = 0.003
(NN)	11/11/04	N60°W	i = 0.003
(OO)	2/11/05	SW	i = 0.002
(PP)	7/6/05	West	i = 0.005

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7/11/05		SK

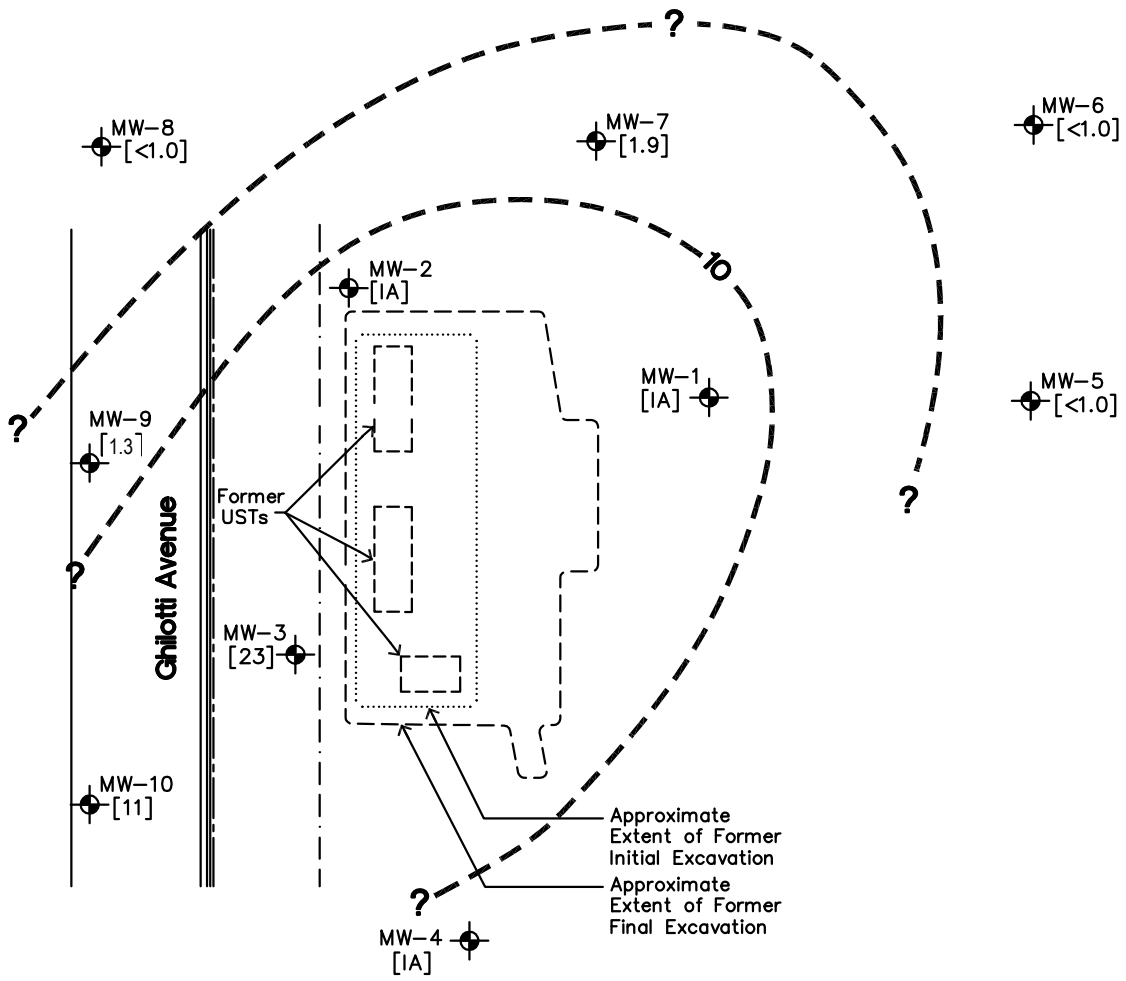
SHEET TITLE: SITE PLAN
GROUNDWATER FLOW DIRECTION AND GRADIENT FOR 06/13/05

PROJECT TITLE: GHILOTTI CONSTRUCTION COMPANY
246 GHILOTTI AVENUE
SANTA ROSA, CALIFORNIA

SCALE: 1" = 30'

FIGURE NO.: 4

SHEET 2 OF 2



N

APPROXIMATE SCALE IN FEET

30 0 30

LEGEND

Monitoring Well Location
IA = Well Inaccessible

Isoconcentration Line
MTBE, ug/L

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3312.00	AJH	3312.00-IS03-3488
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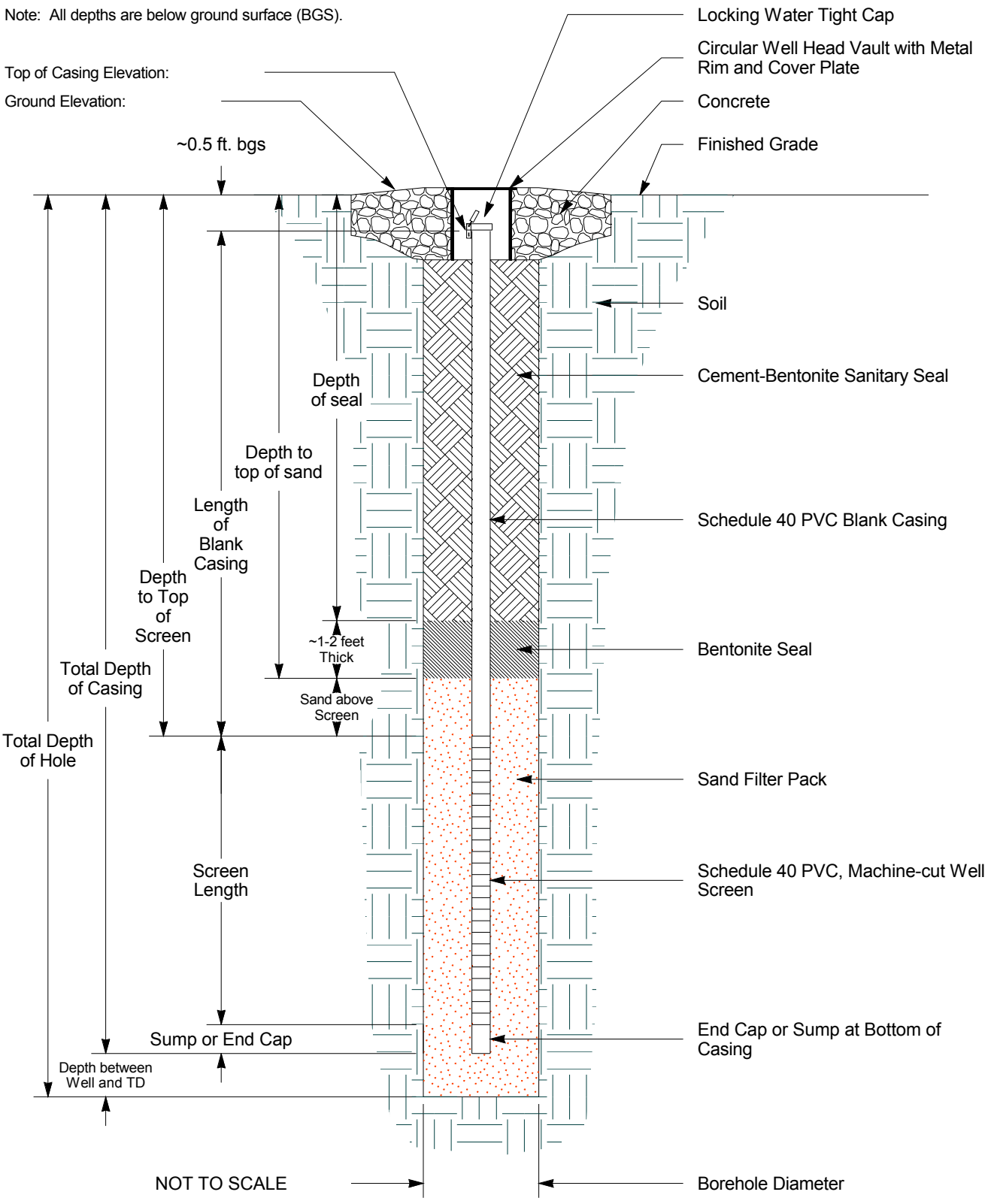
7/29/05		SK

SHEET TITLE: ISOCONCENTRATION MAP
MTBE IN GROUNDWATER FOR 6/13/05

PROJECT TITLE: GHILOTTI CONSTRUCTION COMPANY
246 GHILOTTI AVENUE
SANTA ROSA, CALIFORNIA

SCALE: 1" = 30'

FIGURE NO.: 5



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WELL COMPLETION DIAGRAM

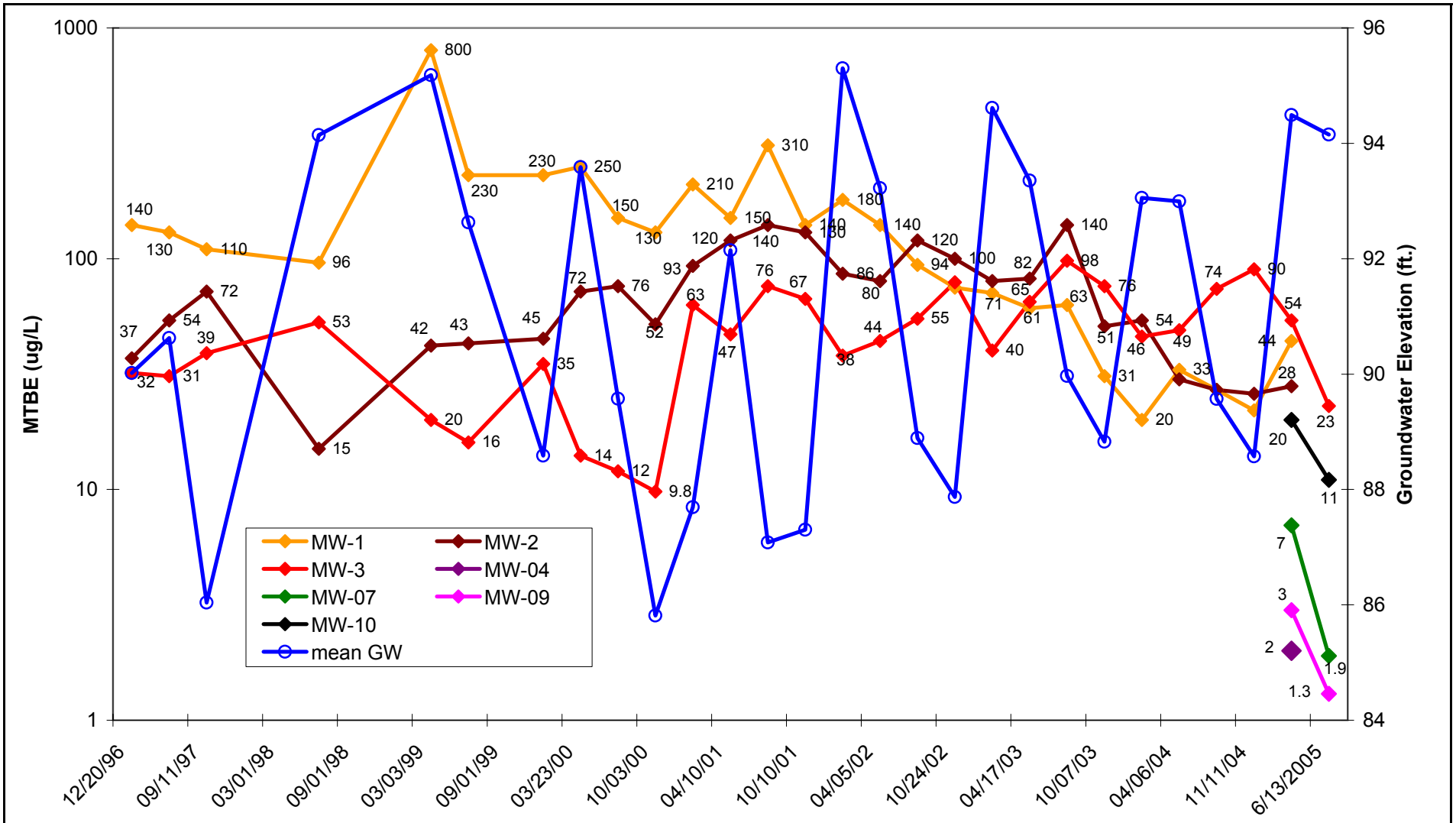
Ghilotti Construction Company
246 Ghilotti Avenue
Santa Rosa, California
Job Number: 01203312.00

FIGURE:
W

Key to Diagram and Tables
246 Ghilotti Avenue, Santa Rosa

TPH-g	=	Total petroleum hydrocarbons in the gasoline range
B	=	Benzene
T	=	Toluene
E	=	Ethylbenzene
X	=	Xylenes
MTBE	=	Methyl tertiary butyl ether
Five Oxys	=	Five ether-based oxygenates [diisopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tert-amyl methyl ether (TAME), MTBE, and tert-butyl alcohol (TBA)]
EDC	=	Ethylene dichloride[1]
EDB	=	Ethylene dibromide[2]
Pb Scavs	=	Lead scavengers (EDC, EDB)
mg/kg	=	Milligrams per kilogram
μg/L	=	Micrograms per liter

[1] EDC has been referred to as 1,2-dichloroethane (1,2-DCA) in previous reports.
[2] EDB has been referred to as 1,2-dibromoethane in previous reports.



Note: MW-1, MW-2, and MW-04 were inaccessible for the June 13, 2005 sampling event. All other wells not plotted have been below the laboratory RDL for MTBE.

SCS ENGINEERS	**MTBE & Groundwater Elevation vs Time**	**DIAGRAM**
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA PH: (707) 546-9461 FX: (707)544-5769	Ghilotti Construction Company 246 Ghilotti Avenue Santa Rosa, California	**A**
Drawn By: KLC / File Name: MTBE-GW	Job Number: 01203312.00	DATE: 07/18/05

Table 1: Historical Soil Excavation, Stockpile and Groundwater Sample Analytical Results
246 Ghilotti Avenue, Santa Rosa

Sample ID	Date	TPH-g	TPH-d	Lead	B	T	E	X
		----------mg/kg----------						
SW-1E	03/19/92	ND	-----	5.3	ND	ND	ND	ND
SW-1W	03/19/92	ND	-----	5.3	ND	ND	ND	ND
SW-2E	03/19/92	-----	ND	-----	ND	ND	ND	ND
SW-2W	03/19/92	-----	ND	-----	ND	ND	ND	ND
SW-3E	03/19/92	-----	12	-----	ND	ND	ND	ND
SW-3W	03/19/92	-----	10*	-----	ND	ND	ND	ND
SP-1	03/19/92	380**	-----	18	ND	ND	ND	0.056
SP-2	03/19/92	-----	970	-----	ND	0.11	0.08	0.43
SP-3	03/19/92	-----	1800	-----	ND	ND	ND	ND
FI-1	03/19/92	170**	1100	5.1	ND	ND	ND	0.12
Groundwater	----------mg/L----------							
GW-1	3/19/92	14**	38	0.018	0.011	ND	0.0059	0.024

* The positive result for TPH-d appears to be a heavier hydrocarbon than diesel.

** The positive result for TPH-g appears to be a heavier hydrocarbon than gasoline.

Table 2: Historical Excavation Soil Sample Results
246 Ghilotti Avenue, Santa Rosa

Sample ID	Date	TPH-g	TPH-d	Lead	B	T	E	X
		----------mg/kg----------						
SW-1	10/01/92	ND	ND	4.5	ND	ND	ND	ND
SW-2	10/01/92	ND	ND	4.1	ND	ND	ND	ND
SW-3	10/01/92	ND	ND	6	ND	ND	ND	ND
SW-4	10/01/92	ND	ND	4.1	ND	ND	ND	ND
B-1	10/01/92	ND	ND	6.1	ND	ND	ND	ND
B-2	10/01/92	ND	1.8	3.8	ND	ND	ND	ND
B-3	10/07/92	1.8*	88	6.2	ND	ND	ND	ND
B-4	10/07/92	ND	23	7.4	ND	ND	ND	ND
B-5	10/07/92	ND	ND	4.9	ND	ND	ND	ND
B-6	10/13/92	ND	ND	6.3	ND	ND	ND	ND
B-7	10/13/92	ND	ND	6.9	ND	ND	ND	ND
B-8	10/13/92	ND	ND	5.9	ND	ND	ND	ND

* The positive result for TPH-g appears to be a heavier hydrocarbon than gasoline.

Table 3: Soil Sample Results - Borings B-1 through B-3 (MW-1 through MW-3)
246 Ghilotti Avenue, Santa Rosa

Sample ID	Date	TPH-g	TPH-d	Lead	B	T	E	X
		----------mg/kg----------						
B-1-9.0	11/09/92	ND	ND	4.0	ND	ND	ND	ND
B-2-8.0		ND	ND	4.8	ND	ND	ND	ND
B-3-9.5		ND	ND	4.9	ND	ND	ND	ND

ND = Not Detected

Table 4: Soil Analytical Results - Monitoring Wells - 2005
246 Ghilotti Avenue, Santa Rosa

ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE
		mg/kg						
MW-04@5.5'	02/01/05	<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-04@10.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-04@15.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-04@20.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-05@5.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-05@11.0'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-05@15.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-06@5.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-06@10.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-06@15.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-07@6.5'	02/02/05	<1.0	NA**	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-07@11.0'*		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-07@15.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-08@5.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-08@10.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-08@15.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-09@5.5'	02/03/05	<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-09@11.0'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-09@16.0'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-10@6.0'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-10@10.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025
MW-10@15.5'		<1.0	<5.0	<0.005	<0.005	<0.005	<0.0015	<0.0025

* Contained lead at a concentration of 3.6 mg/kg.
** Limited sample recovery.
NA = Not Analyzed

Table 8: Groundwater Flow Direction and Gradient - 1996 to Present
246 Ghilotti Avenue, Santa Rosa

Well #	Date Measured	Top of Casing Elevation (ft. > msl)	Depth to Groundwater (feet)	Water Level Elevation (ft. > msl)	Groundwater Flow Direction & Gradient (i)
MW-1	06/24/96	99.48	7.42	92.06	S10°W i = 0.005
MW-2		99.77	7.67	92.1	
MW-3		99.38	7.58	91.8	
MW-1	12/20/96	99.48	10.00	89.48	N80°W i = 0.003
MW-2		99.77	10.5	89.27	
MW-3		99.38	10.1	89.28	
MW-1	04/18/97	99.48	7.19	92.29	S10°W i = 0.005
MW-2		99.77	7.41	92.36	
MW-3		99.38	7.34	92.04	
MW-1	09/11/97	99.48	13.29	86.19	S30°W i = 0.006
MW-2		99.77	13.65	86.12	
MW-3		99.38	13.57	85.81	
MW-1	06/19/98	99.48	5.28	94.2	S48°W i = 0.002
MW-2		99.77	5.62	94.15	
MW-3		99.38	5.3	94.08	
MW-1	03/03/99	99.48	3.35	96.13	S10°W i = 0.002
MW-2		99.77	3.57	96.2	
MW-3		99.38	3.33	96.05	
MW-1	06/02/99	99.48	6.79	92.69	Due South i = 0.008
MW-2		99.77	6.91	92.86	
MW-3		99.38	7.04	92.34	
MW-1	12/28/99	99.48	12.73	86.75	S55°W i = 0.003
MW-2		99.77	13.16	86.61	
MW-3		99.38	12.86	86.52	
MW-1	03/23/00	99.48	4.85	94.63	N68°W i = 0.03
MW-2		99.77	5.33	94.44	
MW-3		99.38	4.91	94.47	
MW-1	06/20/00	99.48	8.44	91.04	S55°W i = 0.003
MW-2		99.77	8.84	90.93	
MW-3		99.38	8.57	90.81	
MW-1	10/03/00	99.48	13.6	85.88	S35°W i = 0.005
MW-2		99.77	13.98	85.79	
MW-3		99.38	13.87	85.51	
MW-1	01/09/01	99.48	13.31	86.17	N75°W i = 0.002
MW-2		99.77	13.71	86.06	
MW-3		99.38	13.31	86.07	
MW-1	04/10/01	99.48	6.79	92.69	S65°W i = 0.003
MW-2		99.77	7.22	92.55	
MW-3		99.38	6.92	92.46	
MW-1	07/11/01	99.48	11.39	88.09	West i = 0.003
MW-2		99.77	11.87	87.90	
MW-3		99.38	11.50	87.88	
MW-1	10/10/01	99.48	14.78	84.70	S75°W i = 0.004
MW-2		99.77	15.24	84.53	
MW-3		99.38	14.93	84.45	
MW-1	01/09/02	99.48	3.75	95.73	S20°W i = 0.003
MW-2		99.77	4.06	95.71	
MW-3		99.38	3.85	95.53	

Table 8: Groundwater Flow Direction and Gradient - 1996 to Present
246 Ghilotti Avenue, Santa Rosa

Well #	Date Measured	Top of Casing Elevation (ft. > msl)	Depth to Groundwater (feet)	Water Level Elevation (ft. > msl)	Groundwater Flow Direction & Gradient (i)
MW-1	04/05/02	99.48	5.09	94.39	S50°W i = 0.002
MW-2		99.77	5.44	94.33	
MW-3		99.38	5.15	94.23	
MW-1	07/03/02	99.48	9.25	90.23	S75°W i = 0.004
MW-2		99.77	9.74	90.03	
MW-3		99.38	9.44	89.94	
MW-1	10/24/02	99.48	13.70	85.78	S40°W i = 0.005
MW-2		99.77	14.13	85.64	
MW-3		99.38	14.01	85.37	
MW-1	01/22/03	99.48	4.65	94.83	S30°W i = 0.002
MW-2		99.77	4.97	94.80	
MW-3		99.38	4.69	94.69	
MW-1	04/17/03	99.48	5.20	94.28	S45°W i = 0.002
MW-2		99.77	5.55	94.22	
MW-3		99.38	5.25	94.13	
MW-1	07/14/03	99.48	8.44	91.04	S75°W i = 0.003
MW-2		99.77	8.90	90.87	
MW-3		99.38	8.59	90.79	
MW-1	10/07/03	99.48	11.75	87.73	S55°W i = 0.004
MW-2		99.77	12.01	87.76	
MW-3		99.38	12.21	87.17	
MW-1	01/02/04	99.48	6.68	92.80	S80°W i = 0.002
MW-2		99.77	7.08	92.69	
MW-3		99.38	6.72	92.66	
MW-1	04/06/04	99.48	5.21	94.27	S45°W i = 0.002
MW-2		99.77	5.58	94.19	
MW-3		99.38	5.32	94.06	
MW-1	07/07/04	99.48	9.71	89.77	S65°W i = 0.003
MW-2		99.77	10.18	89.59	
MW-3		99.38	9.92	89.46	
MW-1	11/23/04	99.48	11.71	87.77	N60°W i = 0.003
MW-2		99.77	12.17	87.60	
MW-3		99.38	11.73	87.65	
MW-1	02/11/05*	99.48	4.90	94.58	SW i = 0.002
MW-2		99.77	5.21	94.56	
MW-3		99.38	4.86	94.52	
MW-04		98.31	3.87	94.44	
MW-05		100.20	5.52	94.68	
MW-06		100.95	6.23	94.72	
MW-07		100.17	5.57	94.60	
MW-08		98.37	3.89	94.48	
MW-09		98.46	4.02	94.44	
MW-10		98.04	3.73	94.31	

Table 8: Groundwater Flow Direction and Gradient - 1996 to Present
246 Ghilotti Avenue, Santa Rosa

Well #	Date Measured	Top of Casing Elevation (ft. > msl)	Depth to Groundwater (feet)	Water Level Elevation (ft. > msl)	Groundwater Flow Direction & Gradient (i)
MW-1	06/13/05	99.48	Inaccessible		West i = 0.005
MW-2		99.77	Inaccessible		
MW-3		99.38	5.23	94.15	
MW-04		98.31	Inaccessible		
MW-05		100.20	5.39	94.81	
MW-06		100.95	6.46	94.49	
MW-07		100.17	5.86	94.31	
MW-08		98.37	4.19	94.18	
MW-09		98.46	4.35	94.11	
MW-10		98.04	4.00	94.04	

Note: Groundwater flow direction is rounded to the nearest 5° beginning in 1996 except for the 06/19/98 and 03/23/00 calculations.

* MW-04 through MW-10 were surveyed to msl on March 9, 2005.

Table 7: Domestic Well Analytical Results
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	OTHER OXY'S*
		µg/L							
DW-1	07/21/98	<50	NA	<50	<0.3	<0.5	<0.5	3.4	NA
	08/05/99	<50	NA	<50	<0.3	<0.5	<0.5	3	NA
	12/28/99	<50	NA	<50	<0.3	<0.5	<0.5	1	<1.0
	03/23/00	<50	<50	<50	<0.3	<0.5	<0.5	1.5	<1.0
	06/20/00	<50	<50	<50	<0.3	<0.5	<0.5	<1.0	<1.0
	10/03/00	NA	NA	NA	NA	NA	NA	1.5	<1.0
	01/09/01	NA	NA	NA	NA	NA	NA	1.1	<1.0
	04/10/01	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	07/10/01	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	10/10/01	NA	NA	NA	NA	NA	NA	<1.0	NA
	02/14/02	NA	NA	NA	NA	NA	NA	<1.0	NA
	04/05/02	NA	NA	NA	NA	NA	NA	0.59	<1.0
	07/03/02	NA	NA	NA	NA	NA	NA	<0.5	<1.0
	10/24/02	NA	NA	NA	NA	NA	NA	<0.5	<1.0
	02/14/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	04/17/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	07/14/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	10/07/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	01/02/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	04/06/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	07/07/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	11/23/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	02/11/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0

Note: * Analysis for MTBE by EPA Method 8020; Analysis for 5 oxy's (including MTBE) by EPA Method 8260B; <25 µg/L For TBA.

Table 6: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	DIPE	ETBE	TAME	TBA
		µg/L										
MW-1	06/24/96	<50	<50	<0.3	<0.3	<0.5	<0.5	NA	NA	NA	NA	NA
	12/20/96	<50	<50	<0.3	<0.3	<0.5	<0.5	**140**	NA	NA	NA	NA
	04/18/97	<50	NA	<0.3	<0.3	<0.5	<0.5	**130**	NA	NA	NA	NA
	09/11/97	<50	NA	<0.3	<0.3	<0.5	<0.5	**110**	NA	NA	NA	NA
	06/19/98	<50	NA	<0.3	<0.3	<0.5	<0.5	**96**	<1.0	<1.0	<1.0	<25
	03/03/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**800**	NA	NA	NA	NA
	03/24/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**360**	NA	NA	NA	NA
	03/26/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**250**	NA	NA	NA	NA
	06/02/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**230**	NA	NA	NA	NA
	12/28/99	<50	NA	<0.3	0.66	<0.5	<0.5	**230**	<1.0	<1.0	<1.0	<25
	03/23/00	<50	<50	<0.3	<0.3	<0.5	<0.5	**250**	<1.0	<1.0	<1.0	<25
	06/20/00	<50	<50	<0.3	<0.3	<0.5	<0.5	**150**	<1.0	<1.0	<1.0	<25
	10/03/00	NA	NA	NA	NA	NA	NA	**130**	<1.0	<1.0	<1.0	<25
	01/09/01	NA	NA	NA	NA	NA	NA	**210**	<1.0	<1.0	<1.0	<25
	04/10/01	NA	NA	NA	NA	NA	NA	**150**	NA	NA	NA	NA
	07/10/01	NA	NA	NA	NA	NA	NA	**310**	NA	NA	NA	NA
	10/10/01	NA	NA	NA	NA	NA	NA	**140**	NA	NA	NA	NA
	01/09/02	NA	NA	NA	NA	NA	NA	**180**	NA	NA	NA	NA
	04/05/02	NA	NA	NA	NA	NA	NA	**140**	<1.0	<1.0	<1.0	<25
	07/03/02	NA	NA	NA	NA	NA	NA	**94**	<1.0	<1.0	<1.0	<25
	10/24/02	NA	NA	NA	NA	NA	NA	**75**	<1.0	<1.0	<1.0	<25
	01/24/03	NA	NA	NA	NA	NA	NA	**71**	<1.0	<1.0	<1.0	<25
	04/17/03	NA	NA	NA	NA	NA	NA	**61**	<1.0	<1.0	<1.0	<25
	07/14/03	NA	NA	NA	NA	NA	NA	**63**	<1.0	<1.0	<1.0	<25
	10/07/03	NA	NA	NA	NA	NA	NA	**31**	<1.0	<1.0	<1.0	<25
	01/02/04	NA	NA	NA	NA	NA	NA	**20**	<1.0	<1.0	<1.0	<25
	04/06/04	NA	NA	NA	NA	NA	NA	**33**	<1.0	<1.0	<1.0	<25
	07/07/04	NA	NA	NA	NA	NA	NA	**27**	<1.0	<1.0	<1.0	<25
	11/23/04	NA	NA	NA	NA	NA	NA	**22**	NA	NA	NA	NA
	02/11/05	NA	NA	NA	NA	NA	NA	**44**	<1.0	<1.0	<1.0	<25
	06/13/05	Well inaccessible										

Table 6: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	DIPE	ETBE	TAME	TBA
		µg/L										
MW-2	06/24/96	<50	<50	<0.3	<0.3	<0.5	<0.5	NA	NA	NA	NA	NA
	12/20/96	<50	<50	<0.3	<0.3	<0.5	<0.5	**37**	NA	NA	NA	NA
	04/18/97	<50	NA	<0.3	<0.3	<0.5	<0.5	**54**	NA	NA	NA	NA
	09/11/97	<50	NA	<0.3	<0.3	<0.5	<0.5	**72**	NA	NA	NA	NA
	06/19/98	<50	NA	<0.3	<0.3	<0.5	<0.5	**15**	<1.0	<1.0	<1.0	<25
	03/03/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**42**	NA	NA	NA	NA
	06/02/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**43**	NA	NA	NA	NA
	12/28/99	<50	NA	<0.3	<0.3	<0.5	<0.5	**45**	<1.0	<1.0	<1.0	<25
	03/23/00	<50	<50	<0.3	<0.3	<0.5	<0.5	**72**	<1.0	<1.0	<1.0	<25
	06/20/00	<50	<50	<0.3	<0.3	<0.5	<0.5	**76**	<1.0	<1.0	<1.0	<25
	10/03/00	NA	NA	NA	NA	NA	NA	**52**	<1.0	<1.0	<1.0	<25
	01/09/01	NA	NA	NA	NA	NA	NA	**93**	<1.0	<1.0	<1.0	<25
	04/10/01	NA	NA	NA	NA	NA	NA	**120**	NA	NA	NA	NA
	07/10/01	NA	NA	NA	NA	NA	NA	**140**	NA	NA	NA	NA
	10/10/01	NA	NA	NA	NA	NA	NA	**130**	NA	NA	NA	NA
	01/09/02	NA	NA	NA	NA	NA	NA	**86**	NA	NA	NA	NA
	04/05/02	NA	NA	NA	NA	NA	NA	**80**	<1.0	<1.0	<1.0	<25
	07/03/02	NA	NA	NA	NA	NA	NA	**120**	<1.0	<1.0	<1.0	<25
	10/24/02	NA	NA	NA	NA	NA	NA	**100**	<1.0	<1.0	<1.0	<25
	01/24/03	NA	NA	NA	NA	NA	NA	**80**	<1.0	<1.0	<1.0	<25
	04/17/03	NA	NA	NA	NA	NA	NA	**82**	<1.0	<1.0	<1.0	<25
	07/14/03	NA	NA	NA	NA	NA	NA	**140**	<1.0	<1.0	<1.0	<25
	10/07/03	NA	NA	NA	NA	NA	NA	**51**	<1.0	<1.0	<1.0	<25
	01/02/04	NA	NA	NA	NA	NA	NA	**54**	<1.0	<1.0	<1.0	<25
	04/06/04	NA	NA	NA	NA	NA	NA	**30**	<1.0	<1.0	<1.0	<25
	07/07/04	NA	NA	NA	NA	NA	NA	**27**	<1.0	<1.0	<1.0	<25
	11/23/04	NA	NA	NA	NA	NA	NA	**26**	<1.0	<1.0	<1.0	<25
	02/11/05	NA	NA	NA	NA	NA	NA	**28**	<1.0	<1.0	<1.0	<25
	06/13/05	Well inaccessible										

Table 6: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	DIPE	ETBE	TAME	TBA
		µg/L										
MW-3	06/24/96	<50	<50	<0.3	<0.3	<0.5	<0.5	NA	NA	NA	NA	NA
	12/20/96	<50	<50	<0.3	<0.3	<0.5	<0.5	**32**	NA	NA	NA	NA
	04/18/97	<50	NA	<0.3	<0.3	<0.5	<0.5	**31**	NA	NA	NA	NA
	09/11/97	<50	NA	<0.3	<0.3	<0.5	<0.5	**39**	NA	NA	NA	NA
	06/19/98	<50	NA	<0.3	<0.3	<0.5	<0.5	**53**	<1.0	<1.0	<1.0	<25
	03/03/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**20**	NA	NA	NA	NA
	06/02/99	<50	<50	<0.3	<0.3	<0.5	<0.5	**16**	NA	NA	NA	NA
	12/28/99	<50	NA	<0.3	0.45	<0.5	<0.5	**35**	<1.0	<1.0	<1.0	<25
	03/23/00	<50	<50	<0.3	<0.3	<0.5	<0.5	**14**	<1.0	<1.0	<1.0	<25
	06/20/00	<50	<50	<0.3	<0.3	<0.5	<0.5	**12**	<1.0	<1.0	<1.0	<25
	10/03/00	NA	NA	NA	NA	NA	NA	**9.8**	<1.0	<1.0	<1.0	<25
	01/09/01	NA	NA	NA	NA	NA	NA	**63**	<1.0	<1.0	<1.0	<25
	04/10/01	NA	NA	NA	NA	NA	NA	**47**	NA	NA	NA	NA
	07/10/01	NA	NA	NA	NA	NA	NA	**76**	NA	NA	NA	NA
	10/10/01	NA	NA	NA	NA	NA	NA	**67**	NA	NA	NA	NA
	01/09/02	NA	NA	NA	NA	NA	NA	**38**	NA	NA	NA	NA
	04/05/02	NA	NA	NA	NA	NA	NA	**44**	<1.0	<1.0	<1.0	<25
	07/03/02	NA	NA	NA	NA	NA	NA	**55**	<1.0	<1.0	<1.0	<25
	10/24/02	NA	NA	NA	NA	NA	NA	**79**	<1.0	<1.0	<1.0	<25
	01/24/03	NA	NA	NA	NA	NA	NA	**40**	<1.0	<1.0	<1.0	<25
	04/17/03	NA	NA	NA	NA	NA	NA	**65**	<1.0	<1.0	<1.0	<25
	07/14/03	NA	NA	NA	NA	NA	NA	**98**	<1.0	<1.0	<1.0	<25
	10/07/03	NA	NA	NA	NA	NA	NA	**76**	<1.0	<1.0	<1.0	<25
	01/02/04	NA	NA	NA	NA	NA	NA	**46**	<1.0	<1.0	<1.0	<25
	04/06/04	NA	NA	NA	NA	NA	NA	**49**	<1.0	<1.0	<1.0	<25
	07/07/04	NA	NA	NA	NA	NA	NA	**74**	<1.0	<1.0	<1.0	<25
	11/23/04	NA	NA	NA	NA	NA	NA	**90**	<1.0	<1.0	<1.0	<25
	02/11/05	NA	NA	NA	NA	NA	NA	**54**	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	**23**	<1.0	<1.0	<1.0	<25

Table 6: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	DIPE	ETBE	TAME	TBA
		µg/L										
MW-04	02/11/05	<50	NA	<1.0	<1.0	<1.0	**1.1**	**1.9**	<1.0	<1.0	<1.0	<25
	06/13/05	Well inaccessible										
MW-05	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<25
MW-06	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<25
MW-07	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	**6.9**	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	**1.9**	<1.0	<1.0	<1.0	<25
MW-08	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<25
MW-09	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	**3.2**	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	**1.3**	<1.0	<1.0	<1.0	<25
MW-10	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	**20**	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	**11**	<1.0	<1.0	<1.0	<25

Note: *Analysis for MTBE by EPA Method 8020; Analysis for 5 oxy's (including MTBE) by EPA Method 8260B; <25 µg/L For TBA.

Table 5: CPT Groundwater Analytical Results
246 Ghilotti Avenue, Santa Rosa

Sample ID	Date	TPH-g	TPH-d	MTBE	B	T	E	X	OTHER OXY'S*
		ug/L							
CPT-01@38.0'	03/02/05	<50	<50	2.8*	<1.0	<1.0	<1.0	<1.0	<1.0
CPT-01@82.0'	03/02/05	<50	<50	<1.0*	<1.0	<1.0	<1.0	<1.0	<1.0

Note: * Analysis for MTBE by EPA Method 8020; Analysis for 5 oxy's (including MTBE) by EPA Method 8260B; <25 µg/L For TBA.

STANDARD
SOIL AND WATER SAMPLING PROCEDURES
AND QA/QC PROTOCOL

December 15, 2003

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS

STANDARD SOIL SAMPLING PROCEDURES

The following outline describes the standard equipment and procedures used by SCS Engineers (SCS) personnel for the collection of soil samples for laboratory analysis.

Equipment

Modified California split-spoon drive sampler, standard penetration sampler, or direct push core barrel (Drill rig sampling)
Drive sampler (hand auger samples)
Typical 1.5-inch to 2.0-inch diameter by 6.0 inch long brass or stainless steel liners and plastic end-caps. Teflon sheets or aluminum foil will also be used for samples suspected of containing volatile compounds (gasoline, aromatic hydrocarbons, solvents, etc.)
Appropriate sample holders will be used for samples suspected of containing volatile compounds (gasoline, aromatic hydrocarbons, solvents, etc.) when EPA Method 5035 sampling is required by the regulatory agency. Standard sample containers will be used when field preservation occurs for EPA Method 5035 compliance.
Typical 1.5-inch to 2.5-inch diameter by 6.0 inch long plastic or metal liners for direct push core barrel.
PID organic vapor analyzer (OVA) or equivalent Field Detector

Sampler and Sample Container Cleaning Equipment:

- Stiff-bristle brushes
- Buckets
- Detergent (Non-phosphate detergent recommended)
- Deionized/potable water

Insulated sample storage and shipping containers (ice chests) and blue ice
Insulated sample storage and shipping containers (ice chests) and dry ice for EPA Method 5035 sample holders which cannot be delivered to the laboratory within 48 hours for preservation
Personal protective equipment (generally level D protection).

General Sampling Procedures

Soil samples are collected in accordance with regulatory guidance. Soil sampling procedures are updated as new guidance is provided by regulatory agencies.

Sampling equipment (i.e., sample liners, auger bits, sampling devices) are pre-washed as necessary with a brush in a detergent solution, followed by double rinsing with distilled or deionized water prior to each sampling event. All new sample liners will have been pre-washed

prior to use. All samples are collected in such a manner as to minimize the volatilization or oxidation due to agitation and/or mixing upon handling.

Soil samples collected by hand augering for lithologic logging, and for chemical and physical analyses are typically obtained by pounding the sample tube into the soil being tested. If an auger hole is drilled with a motorized drill rig, samples are typically collected using a drive sampler, which is driven approximately 18 to 24 inches below the depth of the auger bit. The sampling methodology may be adjusted on a case-by-case basis, depending on the suspected contaminant(s). Where required, EPA Method 5035 sample holders will be filled as rapidly as possible to prevent volatilization from either a sample sleeve or directly from the formation where feasible.

Soil samples collected from a backhoe bucket or from an accessible pit or excavation (ramped or shored) are collected by removing excess material to expose as fresh as possible soil. The sample liner is then pushed into the soil until the liner is full. Where required, EPA Method 5035 sample holders will be filled as rapidly as possible to prevent volatilization directly from the formation or from the backhoe bucket after a small amount of material is removed to expose a fresh surface where feasible.

Standard metal liners will be submitted for analysis in those circumstances where EPA Method 5035 sample holders are deemed to be unusable (gravel or extremely dense material). EPA Method 5035 preservation times will still be required of the laboratory.

When utilizing the split spoon sampler with a drill rig, the portions of the soil sample recovered in additional liners are also examined and noted for any contamination and/or changes in lithology.

The soils, when required, are classified in accordance with the Unified Soil Classification System (USCS). Sample liner ends selected for analysis are typically covered with teflon sheets and sealed with plastic end caps, stored in a cooler (4° C), and transported to a California Department of Health Services Certified Analytical Laboratory for the requested analyses (except where there is no State certification for the analysis being conducted). If storage is required prior to delivery to the laboratory or laboratory courier, the samples are stored in a secure refrigerator prior to delivery.

EPA Method 5035 sample holders used to comply with EPA Method 5035 sample collection procedures will be collected and stored in a cooler (4° C), and transported to a California Department of Health Services Certified Analytical Laboratory for preservation within 48 hours of sample collection. In the event the samples cannot be delivered to the Laboratory to meet the 48 hour preservation requirement, the samples will be placed in an ice chest with dry ice and kept frozen either in the ice chest with adequate dry ice or in a secure freezer until they can be

delivered to the Laboratory for proper preservation. The Laboratory may receive the samples at the job site for field preservation, in which case standard sample tubes will be used.

All sample containers are labeled in the field. The sample labels will typically contain the following information:

Sample identification number (including depth and stratigraphic position where applicable)
Project name
Project address
Sampler initials
Date of collection
Other pertinent information

Chain-of-Custody documents are completed in the field and accompany the samples to the laboratory. The Chain-of-Custody document will typically contain the following information:

Sample identification number (including depth and stratigraphic position where applicable)
Project name
Project address
Project number
Sampler (printed and signed)
Date and time of collection (for each sample)
Matrix type (soil, water, etc.)
Analyses and turn-around-time requested
Billing Information
Other pertinent information

Stockpile Sampling

Discrete samples from thin stockpiles are collected in brass or stainless steel liners, by removing 6 inches to 1 foot of soil and driving the brass or stainless steel liner into the stockpile. Soil samples are collected from thick stockpiles containing volatile contaminants by either augering or otherwise excavating approximately one third to one half way into the pile and then driving the sample liner into the soil in the hole, or collecting a sample from the backhoe bucket. Surface or near surface samples will be collected from homogenized stockpiles containing non-volatile contaminants such as metals, motor oil, or oil and grease.

For final verification characterization, discrete soil samples will be collected at intervals required by regulation, or by the lead regulator for the disposal or treatment option selected.

EPA Method 5035 sampling procedures, as indicated above, will be followed for discrete and/or verification sampling when directed by the regulatory agency and/or the receiving facility. EPA Method 5035 sampling procedures, as described above, will not be followed for composite sampling for disposal unless directed by the landfill(s) in order to profile the soil for disposal.

STANDARD GROUNDWATER SAMPLING PROCEDURES

The following outline describes the standard equipment and procedures which are used by SCS personnel for the collection of groundwater samples for laboratory analysis.

Monitoring Well Development

After monitoring wells are installed and prior to initial sampling of the wells, well development is conducted. Well development is conducted to create an effective filter pack around the well screen, to optimize hydraulic communication between the formation and the well screen, and to assist in restoring the natural water quality near the well. Well development is also conducted to remove fines and to remove any foreign materials introduced during drilling.

Well development will be conducted as follows:

1. Record the static water level and total well depth.

2. Set the pump and record the pumping rate. Pump until the turbidity reaches the desired level, typically measured using a turbidity meter.

3. Discontinue pumping and begin surging using a properly designed surge block and proper surging technique.

4. Measure and record well depth to determine the amount of fines and repeat Step 2.

5. Repeat surging and pumping until the well yields water of acceptable turbidity at the beginning of a pumping cycle.

Depending on the depth of the water, the hydraulic conductivity of the aquifer, and the diameter of the well, pumping may effectively achieve well development. Wells completed in very silty geologic units also may produce consistently turbid samples. Wells of this type will normally be considered to have been properly installed and developed and turbid water samples will be considered representative of mobile constituents in the aquifer.

Monitoring Well Sampling

Groundwater sampling and evaluation of monitoring wells begins by removal of the well caps and measuring water levels in all monitoring wells at a site with a water level indicator. The

fluid in the well is then monitored for the presence of free floating material. If free product is present in the well, its thickness is measured using an oil-water interface probe. A program of free product removal may be initiated. A groundwater sample is typically not collected from any well with confirmed free floating product unless a directive to do so is received from the regulatory agency. All monitoring wells are typically checked for free product until authorization has been received from the lead regulatory agency that checking for free product is no longer necessary. Water levels will continue to be checked until field measurements indicate that equilibrium has been achieved from which to compute the groundwater flow direction and gradient.

If free product is not present in the well being monitored, the well is purged, with groundwater parameters such as pH, conductivity, and temperature measured after each well volume removed. This process continues until parameters being measured such as pH, conductivity, and temperature, have generally stabilized (reproducible within 10%). As a general practice, a minimum of 3 well casing volumes or until the well goes dry constitutes adequate purging. For 2-inch diameter wells, a minimum of 5 gallons of water should be removed unless the well goes dry. Wells will be purged from least to most contaminated after the initial round of sampling. The purge pump will be placed near the top of the measured water table to assure that fresh water from the formation will move upward in the screen. Water will be purged from the well at a rate that does not cause recharge water to be excessively agitated. The purge pump will be lowered into the well as necessary to achieve the desired removal of groundwater.

Once a well has been adequately purged, a groundwater sample is collected using a disposable or pre-cleaned bailer. The groundwater sample is collected from the well in containers appropriate to the analyses being conducted. As examples, 1 liter amber bottles are used for diesel/motor oil/kerosene and oil and grease analyses, 40 milliliter volatile organic analysis vials are used for gasoline BTEX, 8010, 8240, and 8260 analyses, and plastic containers are used for total and/or dissolved metals. Volatile organic analysis vials will be immediately capped after collection and placed on ice to minimize loss of volatiles. All other groundwater sample containers collected will be capped and placed in a storage container in a timely manner and as appropriate for the analysis being conducted. Proper containers, sampling collection procedures, and storage requirements will be verified with the analytical laboratory prior to sample collection. Monitoring wells at a site are purged prior to collection of samples, unless the regulatory agency has approved non-purge samples.

After the wells have been adequately purged, they will be allowed to recover to 80% of their original volume prior to sampling. Any well purged to dryness will be sampled after a sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples.

All collected groundwater samples are stored in an ice chest on blue ice and transported under Chain-of-Custody documentation. The samples are either transported directly to the analytical laboratory on the day of collection, delivered to the laboratory courier on the day of collection,

or are returned to SCS's office where they are stored in a secure refrigerator and then delivered to a California Department of Health Services Certified Analytical Laboratory or a laboratory courier for the requested analyses (except where there is no State certification for the analysis being conducted). Every effort will be made to assure that sample storage will not exceed 72 hours before delivery of the samples to either the laboratory or the laboratory courier. Samples being analyzed for constituents with a longer holding time, such as metals, may be stored for a longer period of time, provided the holding time is not exceeded, before delivery to the laboratory.

Where more than one site is sampled on the same day by the sampler, samples from each site will be stored in separate ice chests. If feasible, samples suspected of being highly impacted will be stored separately from samples which are presumed to be clean. To the extent feasible, samples will be separated based on site and suspected degree of impact while awaiting delivery to or pick up by the analytical laboratory.

All purged fluid is stored on-site in DOT 55-gallon drums pending analysis. The drums and the fluid in the drums are the exclusive property and responsibility of the responsible party. SCS typically samples the drums and arranges for disposal at the appropriate time.

Grab Water Samples

Grab water samples may be collected from the pits, borings, discrete sampler borings, creeks, ponds, and any other bodies or vessels containing water. If the water sample can be safely collected by hand, it will be, otherwise, a disposable bailer will typically be used to collect the sample.

All collected grab water samples will be stored on ice and transported under Chain-of-Custody documentation. The samples will either be delivered directly to the analytical laboratory or to the analytical laboratory courier on the day of the collection, or they will be returned to SCS's office where they will stored in a secure refrigerator a maximum of 72 hours, and then delivered to a California Department of Health Services Certified Analytical Laboratory for the requested analyses (except where there is no State certification for the analysis being conducted) or the laboratory courier. Again, samples being analyzed for constituents with a longer holding time, such as metals, may be stored for a longer period of time before delivery to the laboratory.

Typically, no purge water will be generated during grab water sampling. Should purging occur, the purge water will be stored on-site in either a DOT 55-gallon drum, or other appropriate vessel, pending analysis. Industry standards are that drums and all produced water are the exclusive property and responsibility of the responsible party. SCS will typically sample such containers and arrange for disposal at the appropriate time.

Sample Handling-QA/QC Elements

Sample Handling

The elapsed time between sample collection and delivery to the laboratory or the laboratory courier will typically not exceed 72 hours. Again, samples being analyzed for constituents with a longer holding time, such as metals, may be stored for a longer period of time before delivery to the laboratory, providing the holding time is not exceeded.

Sealed sample containers will only be opened by laboratory personnel during the specified sample extraction process.

Chain-of-Custody

In order to document and trace sample possession from time of collection, a Chain-of-Custody record will be filled out on the Chain-of-Custody document by the sampler for each sample collected. The Chain-of-Custody document will accompany the sample(s) through laboratory analysis. The completed Chain-of-Custody record for each sample will be included in the analytical report from the laboratory.

Blanks

Blanks will be used or collected as part of the sampling program at the discretion of the project manager and/or the lead regulatory agency. Trip and/or field blanks will be supplied and analyzed along with the samples, at the discretion of the project manager and/or the lead regulatory agency.

Modifications

Any modification to the standard sampling procedures and QA/QC protocol outlined in this document for either soil or water samples will be noted and fully explained in the sampling report.

PERSONAL PROTECTION

Sampling at environmental sites increases the chance of exposure of the sampling technician to chemicals which pose a threat to the environment and may pose a threat to the sampler's short-term and/or long-term health at the concentrations present. Each site will be evaluated prior to conducting any field work to ascertain the chemicals detected in the past, the chemicals likely to be detected in the future, and the likely concentrations of those chemicals to be detected. The

chemicals will be evaluated for possible routes of exposure at the concentrations likely to be encountered. Appropriate personal protective equipment to prevent contact with contaminants shall be used. Appropriate chemical-specific gloves shall be worn and changed between sampling events.

In the event the sampler observes or detects activities occurring on or around the site which could cross contaminate collected samples, the sampler will suspend sampling until the activities which may lead to cross contamination cease. If necessary, the sampler will abort the sampling event. Any aborted sampling event will be rescheduled after the suspicious activities are indicated to have ceased, or the activities can be halted during the sampling event. Any suspension or aborting of sampling will be immediately reported to the appropriate registered professional.

Site-specific protection measures are outlined in the Site Health and Safety Plan, where active investigation and/or remediation is occurring.

Active Investigation and/or Remediation
(Refer to Site Specific Health and Safety Plan)

Required personal protective equipment:

Hardhats
Steel toed boots

Recommended personnel protective equipment:

Eye protection
Hearing protection
Gloves to protect against dermal contact with contaminants
Skin protection from sunlight
Photoionization detector/Gas Tech
Respirator (NIOSH approved with appropriate filters for contaminants detected or expected)
Detergent wash and rinse water
First aid kit
Fire extinguisher
Route map to and phone number of nearest hospital

As indicated above, each site must be evaluated on a case-by-case basis to determine the appropriate personal protection materials to use and personal protection activities to implement in the field. As an example, several sun tan lotions contain chemicals which are detected in the diesel range. Care must be taken to prevent cross contamination by sun tan lotion at diesel impacted sites.

Passive Investigation

Recommended personnel protective equipment:

Skin protection
Eye protection
Gloves to protect against dermal contact with contaminants
Detergent wash and rinse water
First aid kit
Fire extinguisher
Route map to and phone number of nearest hospital

As indicated above, each site must be evaluated on a case-by-case basis to determine the appropriate personal protection materials to use and personal protection activities to implement in the field. If a site is known to be heavily impacted, wells should be sampled from the cleanest to most impacted to minimize the potential for cross contamination. The potential for cross contamination can be further minimized by wearing disposable gloves and disposing of gloves after each sample is collected. As an alternative, hands can be washed and rinsed between each sampling event. Where contaminants are non-volatile and do not migrate readily, such as metals, personal protection can be modified to match the primary routes of exposure, which are inhalation and ingestion. In this case it may be appropriate to wear a dust mask if excessive dust is created during sampling. Washing of hands and face before eating or drinking is highly recommended. Protection of clothing by wearing Tyveks is also to be considered, along with washing clothing after each use in conditions where significant dust is created.

Personal protection is designed to prevent or minimize the exposure to the sampler of chemicals or substances which may adversely impact either the short-term or long-term health of the sampler. It is the sampler's responsibility to adequately protect themselves from exposure. All samplers are encouraged to protect themselves and their health to the extent feasible while in the field. All materials necessary to provide adequate protection are available and should be utilized as appropriate.

Cross contamination is to be minimized at all times while sampling. In some instances, proper use and implementation of personal protection will also aid in minimizing cross contamination. The sampler is very highly encouraged to implement proper personal protection, especially where it further minimizes the risk of cross contamination of samples.

Sample Handling-QA/QC Elements

Sample Handling

The elapsed time between sample collection and delivery to the laboratory or the laboratory courier will typically not exceed 72 hours. Again, samples being analyzed for constituents with a longer holding time, such as metals, may be stored for a longer period of time before delivery to the laboratory, providing the holding time is not exceeded.

Sealed sample containers will only be opened by laboratory personnel during the specified sample extraction process.

Chain-of-Custody

In order to document and trace sample possession from time of collection, a Chain-of-Custody record will be filled out on the Chain-of-Custody document by the sampler for each sample collected. The Chain-of-Custody document will accompany the sample(s) through laboratory analysis. The completed Chain-of-Custody record for each sample will be included in the analytical report from the laboratory.

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Blanks will be used or collected as part of the sampling program at the discretion of the project manager and/or the lead regulatory agency. Trip and/or field blanks will be supplied and analyzed along with the samples, at the discretion of the project manager and/or the lead regulatory agency.

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Site-specific protection measures are outlined in the Site Health and Safety Plan, where active investigation and/or remediation is occurring.

Active Investigation and/or Remediation
(Refer to Site Specific Health and Safety Plan)

Required personal protective equipment:

Hardhats
Steel toed boots

Recommended personnel protective equipment:

Eye protection
Hearing protection
Gloves to protect against dermal contact with contaminants
Skin protection from sunlight
Photoionization detector/Gas Tech
Respirator (NIOSH approved with appropriate filters for contaminants detected or expected)
Detergent wash and rinse water
First aid kit
Fire extinguisher
Route map to and phone number of nearest hospital

As indicated above, each site must be evaluated on a case-by-case basis to determine the appropriate personal protection materials to use and personal protection activities to implement in the field. As an example, several sun tan lotions contain chemicals which are detected in the diesel range. Care must be taken to prevent cross contamination by sun tan lotion at diesel impacted sites.

Passive Investigation

Recommended personnel protective equipment:

Skin protection
Eye protection
Gloves to protect against dermal contact with contaminants
Detergent wash and rinse water
First aid kit
Fire extinguisher
Route map to and phone number of nearest hospital

As indicated above, each site must be evaluated on a case-by-case basis to determine the appropriate personal protection materials to use and personal protection activities to implement in the field. If a site is known to be heavily impacted, wells should be sampled from the cleanest to most impacted to minimize the potential for cross contamination. The potential for cross contamination can be further minimized by wearing disposable gloves and disposing of gloves after each sample is collected. As an alternative, hands can be washed and rinsed between each sampling event. Where contaminants are non-volatile and do not migrate readily, such as metals, personal protection can be modified to match the primary routes of exposure, which are inhalation and ingestion. In this case it may be appropriate to wear a dust mask if excessive dust is created during sampling. Washing of hands and face before eating or drinking is highly recommended. Protection of clothing by wearing Tyveks is also to be considered, along with washing clothing after each use in conditions where significant dust is created.

Personal protection is designed to prevent or minimize the exposure to the sampler of chemicals or substances which may adversely impact either the short-term or long-term health of the sampler. It is the sampler's responsibility to adequately protect themselves from exposure. All samplers are encouraged to protect themselves and their health to the extent feasible while in the field. All materials necessary to provide adequate protection are available and should be utilized as appropriate.

Cross contamination is to be minimized at all times while sampling. In some instances, proper use and implementation of personal protection will also aid in minimizing cross contamination. The sampler is very highly encouraged to implement proper personal protection, especially where it further minimizes the risk of cross contamination of samples.